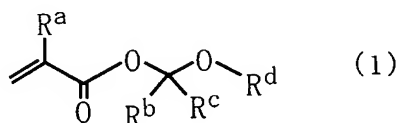


## CLAIMS

1. An unsaturated carboxylic acid hemiacetal ester represented by the following formula (1);

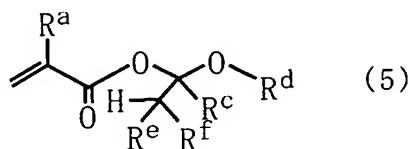


5

wherein  $\text{R}^a$  is a hydrogen atom, a halogen atom, an alkyl group of carbon number 1 to 6 or a haloalkyl group of carbon number 1 to 6,  $\text{R}^b$  is a hydrocarbon group having a hydrogen atom at a first position,  $\text{R}^c$  is a hydrogen atom or a hydrocarbon group and  
10  $\text{R}^d$  is an organic group having a cyclic skeleton.

2. An unsaturated carboxylic acid hemiacetal ester according to Claim 1, wherein a cyclic skeleton in  $\text{R}^d$  is a lactone skeleton or a non-aromatic polycyclic skeleton.

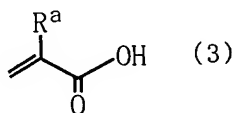
3. A process of producing an unsaturated carboxylic acid  
15 hemiacetal ester, wherein the unsaturated carboxylic acid hemiacetal ester represented by the following formula (5);



wherein  $\text{R}^a$  is a hydrogen atom, a halogen atom, an alkyl group of carbon number 1 to 6 or a haloalkyl group of carbon number  
20 1 to 6,  $\text{R}^c$  is a hydrogen atom or a hydrocarbon group,  $\text{R}^d$  is an organic group having a cyclic skeleton and each of  $\text{R}^e$  and  $\text{R}^f$

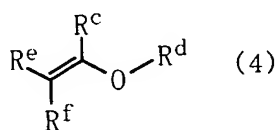
is a hydrogen atom or a hydrocarbon group;

is obtained by allowing an unsaturated carboxylic acid represented by the following formula (3);



5 wherein  $\text{R}^a$  is a hydrogen atom, a halogen atom, an alkyl group of carbon number 1 to 6 or a haloalkyl group of carbon number 1 to 6;

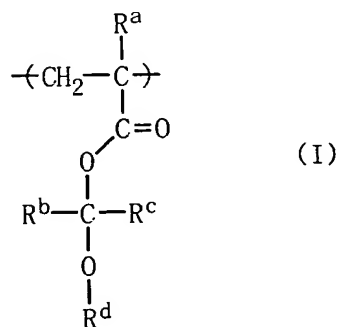
to react with a vinyl ether compound represented by the following formula (4);



10

wherein  $\text{R}^c$  is a hydrogen atom or a hydrocarbon group,  $\text{R}^d$  is an organic group having a cyclic skeleton and each of  $\text{R}^e$  and  $\text{R}^f$  is a hydrogen atom or a hydrocarbon group.

4. A polymeric compound having a repeated unit represented  
15 by the formula (I);



wherein  $\text{R}^a$  is a hydrogen atom, a halogen atom, an alkyl group

of carbon number 1 to 6 or a haloalkyl group of carbon number 1 to 6,  $R^b$  is a hydrocarbon group having a hydrogen atom at a first position,  $R^c$  is a hydrogen atom or a hydrocarbon group and  $R^d$  is an organic group having a cyclic skeleton.

5        5. A polymeric compound according to Claim 4, further having a repeated unit corresponding to at least one monomer selected from a monomer having a lactone skeleton, a monomer having a cyclic ketone skeleton, a monomer having an acid anhydride group and a monomer having an imide group; provided that except for  
10 a repeated unit represented by the formula (I).

6. A polymeric compound according to Claim 4 or Claim 5, further having a repeated unit corresponding to at least one monomer selected from a monomer having a hydroxyl group, a monomer having a mercapto group and a monomer having a carboxyl  
15 group.

7. A photoresist resin composition containing at least a polymeric compound described in any one of Claim 4 to Claim 6 and a photo-acid generator.

8. A process of producing a semi-conductor comprising steps  
20 of coating a photoresist resin composition described in Claim 7 on a base or substrate to form a resist film and forming a pattern through exposure and development.